

CLAIMS

What is claimed is:

- 09253306
- 1 1. An interconnection comprising:
- 2 an aluminum-copper-Group IVA metal alloy layer.
- 1 2. The interconnection of claim 1, wherein the Group IVA metal
- 2 is titanium.
- 1 3. The interconnection of claim 2, wherein the aluminum-copper-
- 2 titanium alloy layer contains up to 0.57 atomic percent titanium.
- 1 4. The interconnection of claim 2, wherein the aluminum-copper-
- 2 titanium alloy layer contains about 0.1 atomic percent titanium.
- 1 5. The interconnection of claim 2, wherein the aluminum-copper-
- 2 titanium alloy layer comprises about 0.5 atomic percent copper and
- 3 about 0.1 atomic percent titanium.
- 1 6. The interconnection of claim 2, further comprising:
- 2 a first titanium layer;
- 3 a first titanium-nitride layer;
- 4 a second titanium layer; and

5 a second titanium-nitride layer,
6 wherein the second titanium-nitride layer overlies the second
7 titanium layer, the aluminum-copper-titanium alloy layer overlies
8 the second titanium-nitride layer, the first titanium-nitride
9 layer overlies the aluminum-copper-titanium alloy layer, and the
10 first titanium layer overlies the first titanium-nitride layer.

37+
1 7. An interconnection formed on a substrate of an integrated
2 circuit comprising an aluminum-copper-titanium alloy layer.

092533306-021001
1 8. The integrated circuit of claim 7, wherein the aluminum-
2 copper-titanium alloy layer contains less than 0.57 atomic percent
3 titanium.

1 9. The integrated circuit of claim 7, wherein the aluminum-
2 copper-titanium alloy layer contains 0.1 atomic percent titanium.

2 10. The integrated circuit of claim 7, wherein the aluminum-
2 copper-titanium alloy layer contains about 0.5% atomic percent
3 copper and about 0.1 atomic percent titanium.

1 11. The integrated circuit of claim 7, further comprising:
2 a first titanium layer;
3 a first titanium-nitride layer;

4 a second titanium layer; and
5 a second titanium-nitride layer,
6 wherein the second titanium-nitride layer overlies the second
7 titanium layer, the aluminum-copper-titanium alloy layer overlies
8 the second titanium-nitride layer, the first titanium-nitride
9 layer overlies the aluminum-copper-titanium alloy layer, and the
10 first titanium layer overlies the first titanium-nitride layer.

1 12. An integrated circuit comprising:
2 a substrate; and
3 an interconnection level disposed about the substrate, the
4 interconnection level having an aluminum-copper-titanium alloy
5 layer.

1 13. The integrated circuit of claim 12, wherein the aluminum-
2 copper-titanium alloy layer contains less than 0.57 atomic percent
3 titanium.

Sub
A3 14. The integrated circuit of claim 12, wherein the aluminum-
copper-titanium alloy layer contains 0.1 atomic percent titanium.

1 15. The integrated circuit of claim 12, wherein the aluminum-
2 copper-titanium alloy layer contains about 0.5% atomic percent
3 copper and about 0.1 atomic percent titanium.

Cont
Sub
B3

- 1 16. A multilayered interconnection structure formed on a
2 substrate, the interconnection comprising:
3 a first titanium layer;
4 a first titanium nitride layer;
5 an aluminum-copper-Group IVA metal alloy layer;
6 a second titanium layer; and
7 a second titanium nitride layer.

04253306 "021999" 1 17. The multilayer structure of claim 16, wherein the Group IVA
2 metal is titanium.

- 1 18. The multilayer structure of claim 17, wherein the aluminum-
2 copper-titanium alloy layer contains less than 0.57 atomic percent
3 titanium.

Sub
B4

19. The multilayer structure of claim 17, wherein the aluminum-
copper-titanium alloy layer contains 0.1 atomic percent titanium.

Sub
B3

- 1 20. The integrated circuit of claim 17, wherein the aluminum-
2 copper-titanium alloy layer comprises about 0.5 atomic percent
3 copper and about 0.1 atomic percent titanium.

Sub
05/1

21. The multilayer structure of claim 16, wherein the second titanium-nitride layer overlies the second titanium layer, the aluminum-copper-titanium alloy layer overlies the second titanium-nitride layer, the first titanium-nitride layer overlies the aluminum-copper-titanium alloy layer, and the first titanium layer overlies the first titanium-nitride layer.

666120-90EES260

Child
E1